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Forest Service

Durango, Colorado

DRAFT REPORT

West Needle Wilderness Study Area

Animas Ranger District
San Juan National Forest
And
San Juan Resource Area
Bureau Of Land Management
San Juan And La Plata Counties
Colorado

A13.92/2:

DRAFT REPORT

WEST NEEDLE
WILDERNESS STUDY AREA

May 1982

SAN JUAN NATIONAL FOREST

ANIMAS RANGER DISTRICT

AND

SAN JUAN RESOURCE AREA

BUREAU OF LAND MANAGEMENT

SAN JUAN AND LA PLATA COUNTIES

COLORADO

DRAFT REPORT

West Needle Wilderness Study Area
San Juan National Forest
and
San Juan Resource Area
Bureau of Land Management

TABLE OF CONTENTS

		Page
I.	PURPOSE AND NEED	I-1
	Introduction	I-1
	Nature and Purpose of Action	I-1
	Vicinity	I-2
	Scope of Issues to be Addressed	I-2
	State and Local Government Policies	I-5
	Wilderness Suitability Criteria	I-5
II.	ALTERNATIVES	II-1
	Overview	II-1
	Summary of Environmental Consequences	II-2
	Summary of Wilderness Suitability or Unsuitability Analysis	II-2
	Preferred Alternative	II-6
III.	AFFECTED ENVIRONMENT	III-1
	Physical Setting	III-1
	Social and Economic Setting	III-3
	Resource and Support Elements	III-4
IV.	ENVIRONMENTAL CONSEQUENCES	IV-1
	Resource Environmental Consequences	IV-1
	Economic and Social Impacts	IV-6
	Wilderness Suitability or Unsuitability	IV-9
	Other Consequences	IV-18
	Short-term Uses and Long-term Productivity	IV-18
	Irreversible and Irretrievable Commitment of Resources	IV-18
	Probable Adverse Effects that Cannot be Avoided	IV-19
	Conflicts with Other Agency Plans	IV-19
V.	GLOSSARY	V-1

CHAPTER I

PURPOSE AND NEED

INTRODUCTION

The West Needle Wilderness Study Area (WSA) was established by Congress in Public Law 96-560, known as the Colorado Wilderness Act of 1980. The Act requires the Secretary of Agriculture to review the WSA and make a recommendation as to its suitability or unsuitability for inclusion in the National Wilderness Preservation System (NWPS) by December 31, 1983. The West Needle Contiguous Wilderness Study Area is land administered by the USDI, Bureau of Land Management and lies adjacent to the West Needle WSA. It too has been identified for possible inclusion in the NWPS, based on a wilderness inventory carried out by that agency (Intensive Wilderness Inventory, Bureau of Land Management, Colorado State Office, November, 1980).

This report, although not a decision document as such, discloses environmental consequences of implementing the proposed action and alternatives to it. Environmental consequences relating to land and activities of other Federal, State and local agencies are also discussed. The recommendation contained herein applies jointly to lands under Forest Service and Bureau of Land Management jurisdiction (as per an Inter-Agency Cooperative Agreement, July, 1981) and will be documented in a Record of Decision.

This summary of information, which relates directly to the WSA, is taken from the draft Environmental Impact Statement for the San Juan National Forest Land and Resource Management Plan as well as the planning records.

NATURE AND PURPOSE OF ACTION

The West Needle Wilderness Study Area was identified as a potential wilderness area several years ago. Its roadless and undeveloped character caused it to be included in the first Forest Service Roadless Area Review and Evaluation (RARE) in 1973. The purpose of RARE was to identify and inventory roadless and undeveloped areas which might be suitable candidates for inclusion in the National Wilderness Preservation System (NWPS). The West Needle WSA was identified as such a candidate.

In 1977 a subsequent review, RARE II, was implemented to identify (1) areas suitable for inclusion in the National Wilderness Preservation System; (2) areas needing no further consideration for wilderness; and (3) areas that should be studied further. As a result of the RARE II review, the WSA was recommended to Congress for inclusion in the NWPS. Congress, however, formally established the West Needle Wilderness Study Area.

The Bureau of Land Management, acting in response to the Wilderness Act of 1964 as well as the Federal Land Policy and Management Act (FLPMA) of 1976 (Public Law 94-579) has also been involved in the process of identifying lands with wilderness characteristics. The initial inventory decision was released by the Colorado State Director on March 22, 1979. Included was a decision to carry out an intensive wilderness inventory on approximately 5,780 acres of land adjacent to the West Needle WSA. This area is known as the West Needle Contiguous Wilderness Study Area (Inventory Number CO-030-229A).

Both the West Needle and the West Needle Contiguous WSA's are the subject of an Inter-Agency Cooperative Agreement, dated July, 1981, between the U.S.D.A., Forest Service and the U.S.D.I., Bureau of Land Management (BLM). This agreement indicates that these two areas will be studied simultaneously under a joint review, and that the Forest Service will be the lead agency in the study. This report is the result of that joint study. Throughout this report, both areas are jointly referred to as the West Needle WSA unless distinctions need to be made.

This summary report consolidates and discloses the analysis of the suitability or unsuitability of the West Needle WSA for inclusion in the NWPS.

VICINITY

The West Needle WSA is located in San Juan and La Plata Counties in southern Colorado between the towns of Durango and Silverton. It adjoins the western boundary of the existing Weminuche Wilderness Area, separated by the Durango and Silverton Narrow Gauge Railroad right-of-way. The area consists of 21,580 acres of unroaded and undeveloped land of which 15,800 acres are administered by the Forest Service, and 5,780 acres are administered by the Bureau of Land Management. Access to the WSA is by U.S. Highway 550, which runs between Durango and Silverton. The Lime Creek Road (Forest Road No. 591), which joins U.S. Highway 550 in two places, runs nearly parallel to the western boundary for approximately five miles at distances of less than a half mile. Almost the entire eastern and southern boundaries parallel both the Animas River and the Durango and Silverton Narrow Gauge Railroad line, from which there are several access points to the WSA. The Cascade Creek Trail (Forest Trail No. 510) borders the extreme southwestern edge of the WSA.

Figure I-1 is a location map showing the WSA in relation to the Four Corners Area (Colorado, Utah, Arizona, and New Mexico), and Figure I-2 is a detailed map of the WSA.

SCOPE OF ISSUES TO BE ADDRESSED

Public issues to be addressed were identified through Forest Service public involvement efforts associated with the Forest Plan. In the initial phase of the process, Federal, State and local agencies and the general public were asked to validate previously identified issues and

FIGURE I-1

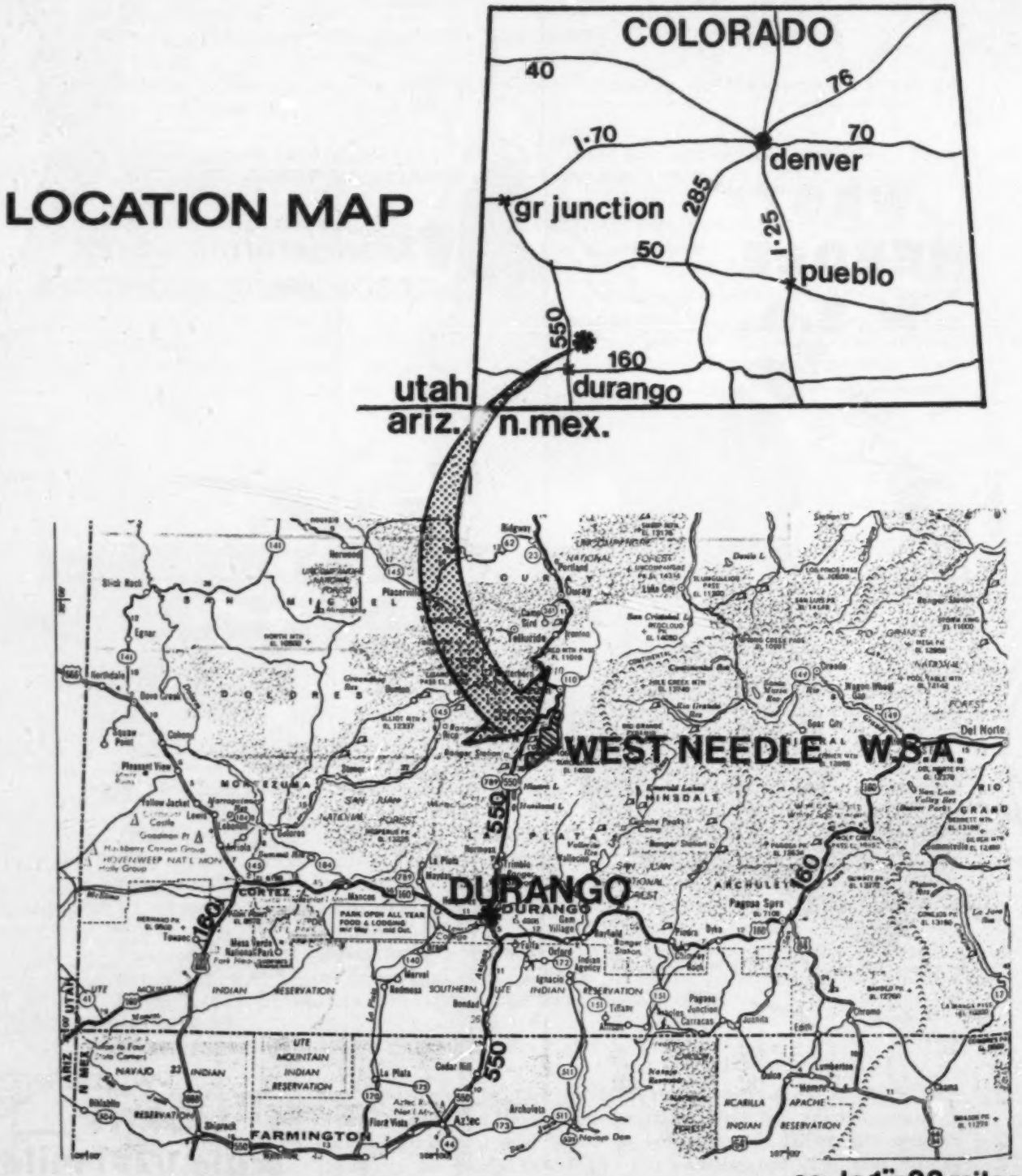
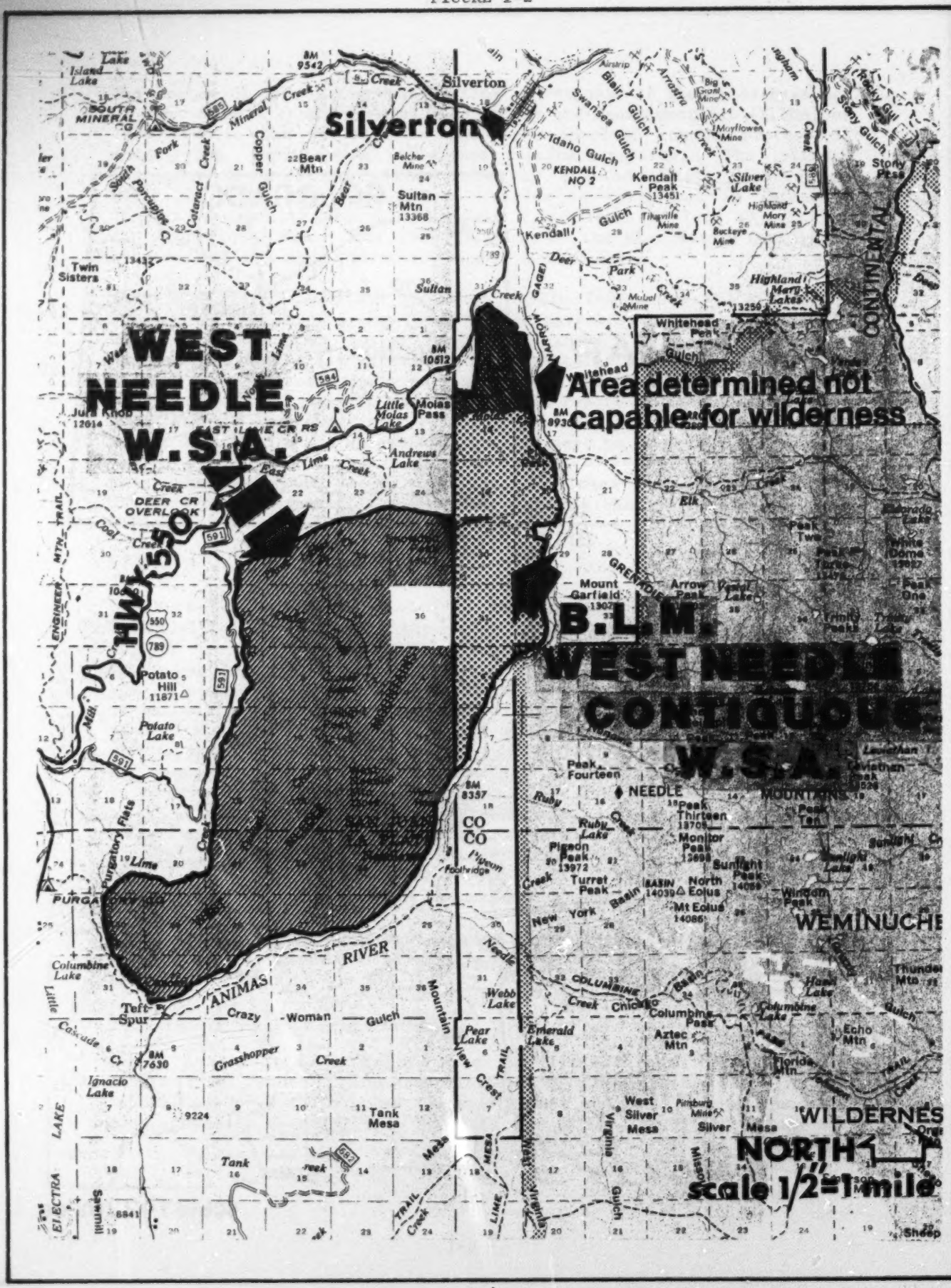

LOCATION MAP
COLORADO
40
76
I-70
70
denver
gr junction
285
I-25
50
pueblo
550
160
durango
utah
ariz.
n.mex.
WEST NEEDLE W.S.A.
DURANGO
CORTEZ
FARMINGTON
Aztec
Bloomfield
Ignacio
Pagosa Springs
Del Norte
scale 1"=22 miles

FIGURE I-2


WEST NEEDLE W.S.A.
Area determined not capable for wilderness
B.L.M. WEST NEEDLE CONTIGUOUS W.S.A.
WILDERNESS
NORTH
scale 1/2"=1 mile
Silverton
HWY 550
RIVER
ANIMAS
WEMINUCHE

define new ones. These were then grouped according to similarity in content. Some of these relate directly to the suitability or unsuitability of the WSA for inclusion in the NWPS, and these are listed below:

-More wilderness area should be designated.

-There is enough or too much wilderness already; no further areas should be designated.

-Important wildlife habitat, such as that for endangered species, must be protected through wilderness designation.

-The West Needle WSA is not suitable for wilderness because of the mining activity that has already taken place there.

The Bureau of Land Management also carried out a public involvement program in relation to its wilderness review process. During this process, those having comments specific to the West Needle Contiguous WSA were encouraged to submit them to the Forest Service as the lead agency. Therefore, the above issues pertain to both the National Forest and BLM portion of the WSA.

Comments made on the West Needle WSA in RARE II are found in the planning records on file in the Forest Supervisor's Office, Durango, Colorado.

STATE AND LOCAL GOVERNMENT POLICIES

The 1981 Colorado State Comprehensive Outdoor Recreation Plan (SCORP) developed by the Colorado Division of Parks and Recreation, makes recommendations for meeting major recreation needs within the State. The SCORP is based on an analysis of recreation opportunities supplied not only by the State, but by the private sector and other levels of government as well. The SCORP divides the State into 13 Planning Regions, and the West Needle WSA falls into Planning Region 9, which contain La Plata, Archuleta, Montezuma, and San Juan Counties and most of Dolores County. The SCORP identifies activities on Forest Service land within these Regions that receive significantly greater public use than current facilities can accommodate. For Region 9, these "needed" opportunities include back-country camping and nature study. The SCORP recommends that the Forest Service focus priorities on providing these additional recreation opportunities.

There are no statements or policies in the land use plans of either La Plata or San Juan Counties that relate to the question of wilderness suitability or unsuitability of the West Needle WSA.

WILDERNESS SUITABILITY CRITERIA

Standards to be met by areas in the NWPS were established in the 1964 Wilderness Act. Forest Service policies require that an area's wilderness capability, availability, and need be evaluated prior to determining the suitability or unsuitability for inclusion in the NWPS. These suitability criteria are defined as follows:

Capability: Capability indicates the degree to which an area possesses the basic characteristics necessary for wilderness designation and manageability without regard to availability or need for wilderness. Indicators of wilderness capability include:

1. The natural integrity and apparent naturalness of the area.

2. Outstanding opportunities for solitude.

3. Opportunities for a primitive and unconfined type of recreation.

4. Manageability of the area as wilderness.

5. Supplemental attributes such as the presence of outstanding ecological, geological, scenic, or historical features.

Availability: Availability indicates the degree to which an area can be committed to wilderness purposes in light of competing demands for other resource uses of the area. Indicators of wilderness availability include:

1. The value of the area as wilderness.

2. Existing constraints and encumbrances on the land.

3. The effect of wilderness designation and management on adjacent lands.

Need: Need indicates the presence of clear evidence supporting current or future public need for additional designated wilderness in the Nation, the Region, and the State. In determining need, consideration is given to whether the tangible and intangible wilderness values determined in the capability analysis outweigh the potential value of non-wilderness resource uses. Indicators of the need for wilderness include:

1. Other wildernesses in the area.

2. Present and anticipated visitor pressure on other wildernesses in the area.

3. Opportunities for unconfined outdoor recreation experiences on nearby lands.

4. Ability of plant and animal species on the area to compete with people and projects.

5. The need to provide sanctuary for species that are unable to survive in less primitive surroundings.

6. The ability to provide for preservation of unique land form types and ecosystems.

CHAPTER II

ALTERNATIVES

OVERVIEW

Because the Colorado Wilderness Act of 1980 directed the Forest Service to address the suitability or unsuitability of the West Needle Wilderness Study Area for inclusion in the National Wilderness Preservation System (NWPS), there are two alternatives to be considered: 1) a recommendation as suitable for wilderness designation, and 2) a recommendation as unsuitable. The Act also provides that wilderness potential be maintained during the study period.

The analysis of suitability or unsuitability of the West Needle Wilderness Study Area (WSA) was done through the San Juan National Forest Land and Resource Management Planning process now under way. In the draft Environmental Impact Statement (EIS), which discloses environmental consequences of the Proposed Action and its alternatives, both suitability and unsuitability of the WSA are discussed in detail in the context of the overall management of the Forest. A recommendation will be made in the Record of Decision of the final EIS for the Forest Plan. This recommendation will receive further review and possible modification in the offices of the Chief of the Forest Service, the Secretary of Agriculture, and the President of the United States. The President will transmit the Administration's final recommendation to Congress. Final decisions on wilderness designation have been reserved by Congress.

"SUITABLE FOR WILDERNESS" ALTERNATIVE

This alternative would be a recommendation to Congress that the entire West Needle Wilderness WSA as well as the West Needle Contiguous WSA, as adjusted because of manageability constraints, is suitable for inclusion in the National Wilderness Preservation System. This adjustment is described below in the section dealing with wilderness capability. Total area that would be recommended as suitable is 20,340 acres.

"UNSUITABLE FOR WILDERNESS" ALTERNATIVE

This alternative would indicate that the entire West Needle WSA is unsuitable for inclusion in the National Wilderness Preservation System and should be managed for non-wilderness purposes. After Congressional concurrence, management of the area would be dictated through the San Juan National Forest Land and Resource Management Planning process. Estimation of resouce outputs and costs associated with this alternative is based upon the maximum resource development that could reasonably occur. No time lag was assumed in converting from current management to maximum resource development.

SUMMARY OF ENVIRONMENTAL CONSEQUENCES

Table II-1 summarizes the environmental consequences of both the suitable and unsuitable alternatives for the West Needle WSA. Shown are selected outputs and values which would be derived from managing the area as either wilderness or non-wilderness. A more detailed discussion is presented in Chapter IV.

SUMMARY OF WILDERNESS SUITABILITY OR UNSUITABILITY ANALYSIS

Suitability for wilderness requires that an area be found (1) capable, (2) available, and (3) needed for wilderness. A summary of this analysis follows.

IS THE AREA CAPABLE FOR WILDERNESS DESIGNATION?

In order to address this criterion, both physical characteristics and manageability were evaluated. The Wilderness Attribute Rating System (WARS), which was developed in RARE II to indicate relative wilderness quality, was used. The WARS ratings for the 300 RARE II areas in Colorado range from 12 to 26 with a median of 19. The rating scale itself ranges from 4 to 28. The Forest Service portion of the West Needle WSA has a WARS rating of 21, which is among the highest of the 38 RARE II areas on the San Juan National Forest. This also places it within the top five percent of Colorado RARE II areas. These WARS ratings for Wilderness Study Areas were reconfirmed during the present Forest Planning effort. (Detailed WARS worksheets are in the planning records on file in the Forest Supervisor's Office in Durango.)

In general, the West Needle WSA is determined to be manageable as wilderness, although significant manageability problems would exist in the area of the West Needle Contiguous WSA north of Molas Creek (See Figure I-2). This area is adjacent to Molas Lake as well as Molas Lake Campground, which is on land owned by the town of Silverton. Recreation activities there include fishing, developed site camping, and off-road vehicle use. The terrain is gently sloping, and there are no topographic or other natural barriers separating the developed recreation area from the WSA. Major manageability problems would exist in attempting to prevent motorized use from taking place within the designated wilderness. Additional manageability problems would exist in relation to patented mining claims in the northern portion of this same area along Sultan Creek.

Because of these problems, the 1,240 acres of the West Needle Contiguous WSA north of Molas Creek is determined not capable of wilderness designation. With Molas Creek as the northern boundary, significant recreation and mineral manageability problems could be avoided. This adjusted boundary would also coincide with a proposed land exchange between the BLM and the Forest Service. If pending legislation is passed by Congress, BLM land south of Molas Creek would be transferred to the San Juan National Forest. Under the suitable alternative, the entire WSA would then be under Forest Service administration.

TABLE II-1

Summary of Environmental Consequences (Outputs are per annum)

Resource	Suitable Alternative #1	Unsuitable Alternative #2
WILDERNESS		
Potential loss of wilderness character	None	Increased
Addition to the National Wilderness Preservation System	20,340 acres	-0-
West Needle WSA (Forest Service)	15,800 acres	
West Needle Contiguous WSA (BLM)	4,540 acres	
RECREATION OPPORTUNITY		
Dispersed recreation opportunity	-0-	126.4 Thousand Visitor Days
Wilderness recreation opportunity	24.6 Thousand Visitor Days	-0-
Area open to off-road vehicle use	-0-	4,000 acres maximum (approximately 18% of the area is accessible)
FISH AND WILDLIFE		
Habitat improvement opportunities	Limited	Limited
RANGE LIVESTOCK		
Grazing use	590 Animal Unit Months	700 Animal Unit Months
Grazing capacity	No change	Increased
TIMBER		
Forest land capable for timber production	-0-	3,808 acres
Forest land suitable for timber management	-0-	-0-
Long-term sustained yield potential	-0-	.5 Million Board Feet

TABLE II-1 (Continued)

Summary of Environmental Consequences (Outputs and values are per annum and values are in terms of 1978 dollars)

Resource	Suitable Alternative #1	Unsuitable Alternative #2
WATER QUALITY		
Risk of pollution caused by recreation and other use	Increased	Increased
Risk of pollution caused by surface disturbing activities	Decreased	Increased
WATER USES		
Feasibility of planned or proposed water developments	Not feasible at this time.	Not feasible at this time.
Likelihood of development of water storage facilities	Low	Low
Effects on existing water uses	None	None
WATER QUANTITY		
Water yield	33,800 Acre-Feet	33,800 Acre-Feet
MINERALS		
Cost of Exploration	Increased	No change
Likelihood of significant mineral discovery and development	Low	Moderate
Costs of administering mineral activity	Increased	No change
LANDOWNERSHIP		
Likelihood of future private ownership under mineral patents	Decreased	No change
PROTECTION		
Integrated pest management opportunities	Decreased	Increased

With respect to other factors, the West Needle WSA is manageable as wilderness. Boundaries are such that conflicts with outside uses can be minimized and, for the most part, can be readily described and recognized on the ground. In many areas they conform with topographic barriers which isolate the area from the sights and sounds of civilization, and they provide adequate opportunity for public access. A problem would exist in locating the western boundary of the BLM contiguous area north of the Forest Service portion. Here there are no topographic or other features to help define the boundary.

The high WARS rating combined with the fact that the area could be readily managed as wilderness indicate that the West Needle WSA, as adjusted by manageability constraints, is capable of wilderness designation.

IS THE AREA AVAILABLE FOR WILDERNESS?

In order to address this criterion, the values of the area as wilderness and as non-wilderness were compared. Included in the analysis were mineral, water, recreation, timber, and grazing values foregone as well as wilderness, and recreation values accrued under a wilderness designation. Significant findings follow:

The area contains approximately 3,800 acres of land classified as capable of timber production. Because of the rugged topography, as well as the scattered nature of timber stands, very little land is considered feasible for timber management.

As of April 30, 1982, there were 502 unpatented mining claims, comprising 10,040 acres, located on the WSA. Ninety-four percent of the WSA is rated as having a high to moderate potential for locatable minerals. Although mineral exploration and development may legally take place under either alternative, feasibility under the suitable alternative may be limited by increased access costs as well as environmental constraints and mitigation measures required in the operating plan. There is also the possibility that mineral discoveries could be foregone following withdrawal of the WSA from mineral entry and location.

Theoretical recreation capacity is approximately five times greater under the unsuitable alternative than under the suitable alternative. This difference is due to the different types of recreation experiences being managed for under the two alternatives. The suitable alternative would prohibit motorized access to the area, although the area that would otherwise be accessible to such use is very small. Actual use under the two alternatives would most likely be concentrated along trails and lakes, so even though recreation capacities are significantly different, use levels would not differ by a factor of five between the two alternatives.

Neither grazing nor water outputs would differ significantly between the two alternatives, although opportunities to carry out integrated pest management would be foregone under the suitable alternative. Presently,

there are no existing or anticipated improvements under special use permit within the WSA. The State of Colorado owns a section of undeveloped land (640 acres) within the WSA boundary, to which they could require access if development is planned.

In summary, the West Needle WSA is available for wilderness designation. Opportunities to develop certain resources such as timber, grazing, and water yield would be foregone under the suitable alternative, although the values associated with these are relatively small. The ability to meet current and anticipated resource needs is not dependent on land within the West Needle WSA.

IS THE AREA NEEDED FOR WILDERNESS?

There are over 1.2 million acres of wilderness within a 100 mile radius of the WSA, with an additional 146,000 acres currently being studied as to their suitability or unsuitability for inclusion in the NWPS.

The West Needle WSA would add 20,340 acres of spectacular scenery, rugged peaks, and representations of alpine and sub-alpine ecosystem to the NWPS. Although these ecosystems and landforms are not necessarily unique with respect to other wildernesses in the vicinity, the area is readily accessible and popular. The corridor between Durango and Silverton receives very high recreation use, including sight-seeing, photographing scenery, picnicking, camping, traveling for pleasure, fishing, horseback riding, hiking, and back-packing. A large number of visitors to the area ride the Durango and Silverton Narrow Gauge Railroad, and some even use the train as a means of access to the existing Weminuche Wilderness. The WSA can be viewed and accessed from the railroad right-of-way as well.

Because of the availability of similar wilderness opportunities on nearby areas, it cannot be stated that there is a critical need for the West Needle WSA as designated wilderness.

PREFERRED ALTERNATIVE

Based on the factors of capability, availability, and need outlined above as well as overall management direction outlined in the Forest Plan, the West Needle WSA is recommended as suitable for addition to the National Wilderness Preservation System.

CHAPTER III

AFFECTED ENVIRONMENT

The suitability or unsuitability of the West Needle WSA for wilderness designation is a function of the physical, biological, social, and economic environment within and surrounding the WSA. This chapter describes the various environmental factors related to this suitability determination. Chapter IV describes the effects on the environment resulting from implementation of the alternatives.

PHYSICAL SETTING

VEGETATION

Vegetation on the WSA varies with elevation, which ranges from 8,000 feet to over 13,100 feet. Coniferous vegetation occurs over 40 percent of the area, with the dominant species being Engelmann spruce. Aspen stands, which occur on five percent of the area, are scattered throughout. The remainder of the area is mostly grassland and rock. Browse occurs on only a few areas, primarily at lower elevations. Thurber fescue is the most abundant type of vegetation in non-timbered areas. A variety of grasses and forbs is also found as understory vegetation and within grassland and wetland areas. Above timberline, rocklands and rock outcrops commonly preclude any vegetation. The higher peaks have a considerable amount of rock and soils, where they exist, are shallow. Table III-1 lists the frequency of occurrence of various ecosystem types on the WSA in comparison with other wildernesses. The table indicates that the area is not unique with respect to vegetative composition. Lodgepole pine is common on the western side of the WSA in the area of the Lime Creek Burn, which occurred in 1879. This species, which is exotic to the area, was planted following the burn and is gradually being interspersed with naturally occurring spruce and fir.

There are no known threatened or endangered plants in the WSA.

LANDFORM

The WSA lies within what is called the San Juan uplift portion of the Southern Rocky Mountain Province. The area is characterized by rugged and steep terrain. The mountains have been uplifted and subjected to glacial erosion and shaping. The WSA is flanked on the east by the steep Animas Canyon and partly on the west by Lime Creek Canyon.

GEOLOGY

The geological setting of the West Needle Wilderness Study Area consists mostly of Pre-Cambrian metamorphic and intrusive igneous rocks. Lower flanks of mountains and canyon walls are veneered with talus, landslide deposits, and thin gravels. Rocks of the western half of the WSA are metamorphosed lava flows, called Twilight Gneiss. The eastern half of

TABLE III-1

Representative Ecosystems in the West Needle Wilderness Study Area and Nearby Wildernesses

Ecosystem	West Needle WSA	Weminuche	South San Juan	Lizard Head	La Garita
ALPINE	Extensive	Common	Common	Common	Extensive
SUBALPINE	Common	Common	Common	Common	Common
SPRUCE-FIR	Uncommon	Common	Common	Uncommon	Common
DOUGLAS-FIR	Uncommon	Uncommon	Uncommon	Uncommon	Uncommon
ASPEN	Uncommon	Uncommon	Uncommon	Uncommon	Uncommon
PONDEROSA PINE	None	Uncommon	None	None	None
LODGEPOLE PINE	Uncommon	None	None	None	Uncommon

KEY

Extensive - Type occurs on more than 50 percent of the area.
Common - Type occurs on 10 to 40 percent of the area.
Uncommon - Type occurs on less than 10 percent of the area.
None - Type does not occur in area.

the WSA consists of a variety of rock types. The Irving Formation, which includes metamorphosed volcanics and sediments crosses the southern two-thirds of the eastern half. The Tenmile Granite forms an intrusive mass along the eastern boundary of the WSA.

SOILS

Soil characteristics and production potentials within the WSA vary considerably as a function of landform, slope and parent material. Although there is only limited data on soils in the WSA, some general statements and assumptions can be made. Soils and landforms of the area can generally be classified into two groups, and these areas are described below:

Areas with smooth to moderately sloping terrain - These occur in the northwest and central mid-portions of the WSA. Soils range from shallow to moderately deep and are medium to coarse textured often times with gravel or cobble on the surface. They are mostly well drained but there are bog-like depressions associated with this area that remain wet and saturated most of the year. The soil is generally not very productive, and is best suited for water storage, wildlife habitat, grazing and recreational uses. These soils and landforms comprise approximately 40 percent of the WSA. The area has a low potential for surface erosion and mass wasting.

The remainder of the area, roughly 60 percent of the WSA, is made up of steep to very steep mountain and canyon sideslopes. The area is predominantely rockland, rock outcrop and talus slopes. Some areas contain very shallow loamy soil materials, supporting some vegetation in the form of grass or scattered trees. These areas however, are generally not capable of supporting commercial timber production. Erosion hazard is low, due to the proportion of bare rock, and soils are generally not erodable. The major hazards are rock falls and potentially unstable talus areas.

SOCIAL AND ECONOMIC SETTING

The West Needle Wilderness Study Area is located within the Animas Human Resource Unit (HRU), which is one of three areas of analysis within the primary zone of social and economic influence of the San Juan National Forest. The Animas HRU contains most of La Plata and San Juan Counties and a small portion of Hinsdale County. The population of San Juan County has remained stable at approximately 850 people over the past 20 years, most of whom live in Silverton. Population of La Plata County, which includes Durango, grew from 19,200 to 27,100 between 1970 and 1980, for an increase of over 40 percent. That portion of Hinsdale County within the HRU is largely uninhabited.

Per capita income in the HRU averaged $5,920 in 1978. Unemployment in 1980 averaged 3.5 percent, although under-employment remains a chronic problem because of the large number of trained and educated individuals who migrate to the area because of its perceived quality of life rather than its employment opportunities.

Lifestyle - The Animas HRU is moderately urbanized in the Durango area, but a rural mountain lifestyle prevails in Silverton and in most other areas. In both of these towns lifestyles for many are centered around a seasonal tourist economy. The majority of the workforce is employed in retail and tourist-related business; skilled trades such as construction, agriculture, and logging; and in white-collar professions such as public administration and education. Oil and gas exploration and drilling and hard-rock mining, as well as construction and tourism, are growing areas of employment. A large proportion of the residents of the HRU spend at least some of their leisure time in the Forest.

Attitudes, Beliefs and Values - This HRU has a mix of residents with a wide range of attitudes, beliefs, and political philosophy. At one end of the spectrum are those who believe strongly in individual rights and oppose interference from government at all levels. At the other end of the spectrum are those who believe that government can and should be used to solve social and community problems. The community within the HRU is easily polarized on issues, including those related to natural resource management.

Social Organization - The standard social services available in most small American cities are found in Durango, including a four-year college. Because of its diverse population and economic base, the Animas HRU is not as vulnerable to social disruption from specific projects such as mineral or ski area development as other communities in southwest Colorado might be.

Population and Land Uses - Population increases of the past decade have created problems resulting from the conversion of agricultural lands to residential and commercial uses. Recreational use of the National Forest is growing along with population increases, with much of the activity taking place on Forest lands within the Animas HRU.

RESOURCE AND SUPPORT ELEMENTS

RECREATION

Dispersed Recreation

There are no developed recreation sites within the West Needle WSA, and no recreational structures other than trails. Current use, approximately 8,000 RVD's annually over the 20,340 acres (0.39 RVD's per acre), is relatively low compared to other nearby wildernesses and dispersed recreation areas in the San Juan National Forest.

Current recreation activities include fishing, hiking, horseback riding, big game hunting, viewing scenery, cross-country skiing, and mountain climbing. Other activities occurring in limited amounts include some snowmobile travel and motorcycle riding on trails. Virtually all recreation opportunities in the West Needle WSA are of the semi-primitive non-motorized type.

Visual Resource

The landscape of the WSA is dominated by topographic features including sharp peaks, glacial remnants, cirque basins, and rugged, steep cliffs. Talus slopes and avalanche chutes are common. Vegetation is mainly alpine and sub-alpine intermixed at lower elevations with deciduous and coniferous trees and large natural openings. Vegetation contrasts in form and color with barren rock and talus slopes. Waterforms include small alpine lakes, ponds, dispersed wet meadows, and small streams, some of which cascade from sheer rock walls. About 60 percent of the WSA is classified as having distinctive or outstanding scenic quality. The remainder is common to the characteristic alpine landscape of the area.

Cultural Resource

Although no archaeological field surveys have been undertaken for the WSA, it is possible that remnants of some small prehistoric camps exist. It is unlikely that archaeological remains are numerous due to the rugged topography and extreme climatic conditions which would not have been conducive to long-term use by native peoples. Generally the WSA is considered to have low archaeological sensitivity.

One important historic property exists in the vicinity. The former Denver and Rio Grande Western Railroad from Durango to Silverton, which is now operated as a tourist attraction by the Durango and Silverton Narrow Gauge Railroad, runs along the eastern and southern boundary of the WSA. It is listed on the National Register of Historic Places and is designated a National Historic Landmark by the U. S. Department of the Interior. No other significant historic properties are known to exist within the WSA, which is considered to be of low historic sensitivity for much the same reasons as cited for archaeological sensitivity.

The WSA is situated in the historic territory of the Ute Indians. Archival research and contacts with members of the Southern Ute and Ute Mountain Ute Tribes, however, have failed to identify any specific sites important to the Ute peoples within the WSA.

WILDERNESS

The West Needle WSA is primarily natural in character, and there are no known "imprints of man." Portions of the area have been used for grazing of domestic livestock, but this is not evident to the casual observer.

Outstanding opportunities for unconfined recreation within an unmodified environment are afforded. The WSA has rugged mountains, numerous side canyons with enclosed cirque basins, and abundant wildlife. These features are attractive to hikers, backpackers, fishermen, hunters, mountain climbers and cross-country skiers. Because of the varied terrain and vegetative composition, as well as the large area of contiguous wildlands, the area offers outstanding opportunities for solitude.

FISH AND WILDLIFE

Big Game

Big game species presently found in the West Needle WSA include elk, mule deer, Rocky Mountain goat, Rocky Mountain bighorn sheep, black bear and possibly mountain lion. All species use the area primarily as spring, summer, and fall habitat, although mountain goat, bighorn sheep, and black bear make limited use of the area during winter months.

Small Game

Among the small game species inhabiting the WSA are snowshoe hare, blue grouse and white-tailed ptarmigan.

Non-game

Numerous song birds, raptors, and mammals normally found in coniferous forests and subalpine and alpine regions of Colorado inhabit the WSA. Commonly observed species include pika, marmot, Canada jay, goshawk, coyote, weasel and pine grosbeak. Because of its rugged terrain and remote conditions, a large portion of the area is considered to be acceptable wolverine habitat.

Threatened and Endangered (T&E) Species

There are no known listed T&E species presently inhabiting the WSA. The wolverine is on the Colorado list of threatened species, but it is not known to inhabit the area even though acceptable habitat is present. Habitat for pine marten, a species of limited population, is also found within the WSA.

Fish

Cutthroat, rainbow and brook trout are found in several of the lakes and streams within the WSA. A very limited amount of natural reproduction occurs in streams. Such populations are sustained by periodic restocking by the Colorado Division of Wildlife and by fish escaping from lake populations. Many of the streams in the area do not support fish because of steep gradients and extreme fluctuations of flow.

RANGE

Range activity on the West Needle WSA is limited mainly to domestic sheep grazing which is authorized on about two-thirds of the WSA. Due to the steepness of the terrain, almost thirty percent of the authorized area is not grazed. Some grazing by horses for recreational activity also occurs.

Most of the range is in "fair" or better condition, and productivity ranges from average to below average for the Forest. Current annual grazing use on both the Forest Service and BLM portions of the WSA is approximately 590 animal unit months (AUM's). Of this, 360 AUM's are

permitted on the total unadjusted BLM portion of the WSA. On the BLM portion north of Molas Creek that is determined not suitable because of manageability constraints, permitted grazing use is approximately 40 AUM's per year. There are portions of two sheep allotments in this area, both of which are under extensive management.

On Forest Service land, there are portions of three sheep allotments, two of which are extensively managed and one of which is currently being managed for recreation horses and big game.

TIMBER

Of the 20,340 acres within the WSA, 19 percent (3,808 acres) is classified as forest land capable for timber production. Sixty-nine percent of the capable forest land has sawtimber size trees. The predominant timber type is spruce-fir which covers eighty-four percent of the capable forest land. The distribution by timber type and size class is shown in the table below.

Area Capable of Timber Production by Type and Stand Size Class (Acres)

Timber Type	Stand Size Class: Non-stocked	Seedling/ sapling	Pole timber	Saw-timber	Total
Ponderosa pine	-	-	-	-	0
Spruce-fir	-	-	1,168	2,045	3,213
Douglas-fir	-	-	-	115	115
Aspen	-	-	-	480	480
Total	0	0	1,168	2,640	3,808

The current timber inventory on capable forest lands is 10.9 million cubic feet or 37.3 million board feet. Most inventory volume is in the spruce-fir type and almost all capable forest land occurs on slopes between 30 and 60 percent. The distribution of inventory volume is shown in the table below.

Inventory Volume by Timber Type

Timber Type	Million Cubic Feet	Million Board Feet
Ponderosa pine	0	0
Spruce-fir	9.7	33.8
Douglas-fir	0.3	1.0
Aspen	0.9	2.5
Total	10.9	37.3

Timber productivity on the West Needle WSA ranges from average to somewhat below average for the Forest. The WSA is characterized by rugged terrain, and many areas would be inaccessible from the standpoint of an economically efficient timber management program. Timber stands are widely scattered throughout the WSA.

WATER

Water Yield

Water yield from the West Needle WSA is estimated at 33,800 acre-feet per year or 1.66 acre-feet/acre/year. The eastern part of the WSA drains into the Animas River via several short, steep, ephemeral drainages. Molas Creek, along the eastern part, is the only perennial stream. The western portion of the WSA is drained by tributaries to Lime Creek including Crater Creek and Twilight Creek. Water uses within the WSA include wildlife and livestock drinking, fishing, scenic viewing and maintenance of riparian and aquatic habitat. Downstream water uses on the Animas River include a wide variety of both domestic and agricultural uses.

At present, no water resource measurement sites are located within the WSA.

Water Quality

No specific water quality data is presently available for the WSA, although the predominantly Precambrian parent material (gneiss, quartzite, schist) commonly produces high quality water low in both dissolved substances and sediment.

MINERALS

Mining and Mineral Leasing Activity

Current mining activity, which is limited to a number of unpatented mining claims, is minimal. There have been no recent surface disturbing mineral exploration activities that would require an operating plan, although the BLM portion of the WSA borders an active uranium mine. There are no applications or existing leases for leasable minerals in the WSA.

Current mineral activity is summarized in the following table.

Activity (As of April 30, 1982)	Number	Acres
Patented Mining Claims	0	0
Unpatented Mining Claims	502	10,040
Producing Sites or Known Reserves	0	0
Federal Oil & Gas Lease Applications	0	0
Federal Oil & Gas Leases	0	0

Of the 502 unpatented mining claims, 31 are located in the area north of Molas Creek. These comprise approximately 620 acres.

Mineral Potential

The potential for locatable and leasable minerals in the WSA is summarized in the table below.

Area rated as having high/moderate potential for:	Acres	Percent of Study Area
Locatable minerals	20,210	94
Leasable minerals	0	0

The combined rating of "high/moderate potential" in the above table includes a range of possible situations, from areas having favorable geology and structure with considerable field activity to areas having only sub-economic deposits with occasional activity.

Precious and base metals have been successfully mined from deposits several miles to the north and northeast of the WSA. While no economic ore has yet been discovered within the WSA, the potential exists for precious and base metal occurrences.

Uranium deposits occur within fault zones at Elk Park. In addition, uranium potential exists across the northern portion of the WSA, including the BLM contiguous portion.

Tungsten and cobalt prospects exist in BLM lands adjacent to the WSA. These minerals have been classified as strategic and critical by the U. S. Bureau of Mines.

Geological Survey - Bureau of Mines

A Geological Survey - Bureau of Mines Mineral Study is planned for the summer of 1982. Currently, published geologic maps and reports are the only sources of mineral information for the WSA.

LANDS

Land Ownership

Total land area within the West Needle Wilderness Study Area consists of approximately 15,800 acres administered by the Forest Service and 5,780 acres administered by the BLM. On the BLM portion, approximately 1,240 acres are in the area north of Molas Creek. One section (640 acres) is owned by the State of Colorado including all surface and mineral rights. This section is completely surrounded by Forest Service and BLM land, and has been identified as highly desirable for acquisition by the Forest Service.

A Bill (H. R. 3433) has been submitted to the Congress that would modify the boundary of the San Juan National Forest. If passed, this Bill would transfer the area of the West Needle Contiguous WSA south of Molas Creek to the Forest Service. The entire WSA, excluding the area determined unsuitable for wilderness management, would then be under Forest Service administration.

Special Land Uses

There are no improvements under special land use permits.

Power Withdrawals

Approximately 2,200 acres within the Forest Service portion and 1,650 acres within the BLM portion are encumbered by power-site withdrawals (Power Site Classification No. 219 and Executive Order of July 2, 1910

respectively), although there are no existing plans to develop these areas for power generation. The Federal Energy Regulatory Commission is scheduled to review these withdrawals for possible revocation within the next three years.

Proposed Impoundments

No existing or proposed impoundments, irrigation reservoirs, or distribution systems are located within the WSA. No decreed water rights exist according to Colorado Water Resource Division records.

FACILITIES

The West Needle Wilderness Study Area contains no facilities other than trails. These are maintained by the Forest Service and are used principally for recreation and to a minor degree, for livestock management. The Molas Trail, (Forest Trail 665) traverses from U.S. Highway 550 to the Animas River, passing through the extreme northern portion of the WSA. The Crater Lake Trail (Forest Trail 623) accesses the central portion of the WSA from Andrews Lake, which is located adjacent to U.S. Highway 550. This trail terminates at Crater Lake. Total length of trails within the WSA is approximately 5.5 miles.

Road access to the West Needle Wilderness Study area is provided via U.S. Highway 550 which is an all weather route between Durango and Silverton. The Lime Creek Road (Forest Road 591), which joins U.S. Highway 550 in two places, borders approximately five miles of the southwestern edge of the WSA. The Cascade Creek Trail (Forest Trail 510) borders the extreme southwestern edge of the WSA.

PROTECTION

Air Quality

The West Needle WSA is designated a Class II air quality area. This classification allows only moderate degradation over baseline concentrations of sulfur oxides and particulate matter.

Fire

Fire has always been a natural component of the ecosystems represented within the WSA. A naturally occurring fire regime has the effect of reducing fuels, maintaining wildlife habitat diversity, creating browse, and preventing the attainment of climax vegetation across large areas of land. In recent years, natural fire has generally been excluded from the area through intensive control and suppression efforts, although some man-caused fires have occurred along the eastern boundary of the WSA in association with the narrow gauge railroad. Most fires result from lightning strikes and are controlled at less than 10 acres in size.

CHAPTER IV

ENVIRONMENTAL CONSEQUENCES

This chapter outlines environmental effects resulting from implementation of the alternatives under consideration. It is based on information in Chapter III as well as other information contained in the draft Environmental Impact Statement for the Forest Plan. The first section describes environmental consequences as they relate to individual resources, and the second section deals with overall wilderness suitability.

RESOURCE ENVIRONMENTAL CONSEQUENCES

RECREATION

Under the unsuitable alternative, the WSA would be managed for roaded natural-appearing recreation on 3,020 acres, for semi-primitive motorized recreation on 900 acres, and for semi-primitive non-motorized recreation on 17,660 acres. Under this regime, the WSA could theoretically accommodate 126,400 recreation visitor days (RVD's) annually while still meeting recreational experience objectives and protecting resource values. Based on the 1980 Resource Planning Act (RPA) value of $3.00 per RVD, the value of this use at capacity is $379,200 annually.

Under the suitable alternative, the WSA would be managed for semi-primitive non-motorized recreation on 21,365 acres and for roaded natural appearing recreation on 215 acres. Under this regime, the WSA could theoretically accommodate 24,600 RVD's annually and still meet desired wilderness experience objectives and protect wilderness resource values. Using a Resource Planning Act (RPA) value of $8.00 per wilderness RVD, the value of this use at capacity is $196,800 annually.

Major recreation uses on the WSA include hiking, backpacking, hunting, fishing, and viewing scenery. A small amount of motor biking and snowmobiling occurs. Under the unsuitable alternative, this would not change significantly; under the suitable alternative, the small amount of motorized use would cease, but other activities would continue. Certain uses could increase somewhat as a result of the national recognition the area would receive following an official wilderness designation.

Cultural Resources

Under the suitable alternative, any archaeological or historical resources would be protected against potentially destructive activities caused by motor vehicle use or land altering projects. Conversely, as recreation use increases, greater use at campsites and along trails could accelerate deterioration of any fragile archaeological sites. The possibility of discovering or developing a major archaeological site is low under this alternative.

Under the unsuitable alternative, consequences would be very similar because the terrain of the WSA would preclude any kind of development, including road construction, in all but a few areas, and because the probability of any significant archaeological or historical sites is very low.

In summary, environmental consequences on cultural and historic properties should be limited under either alternative due to the low potential for significant sites to exist.

There would be no known effects on Native American religious values under either alternative.

Visual Resource

Under the suitable alternative, natural landscape character would be maintained primarily by ecological changes. Any mineral developments could also result in localized site degradation if not properly managed. The visual quality objective of preservation would be prescribed for the area to assure naturalness.

Under the unsuitable alternative, effects on the visual resource should not differ significantly from those under the suitable alternative because of restrictions imposed by the terrain on development of the area. Any minerals development or roading activity could result in visual degradation.

WILDERNESS

The entire West Needle WSA has been managed to retain its wilderness character since its consideration for inclusion into the National Wilderness Preservation System (NWPS). Its relative proximity to a major highway (U.S. Highway 550) and other Forest roads would provide relatively easy visitor access to a wilderness experience characterized by outstanding scenery, rugged terrain, and opportunities for solitude.

Under the unsuitable alternative, any increased mineral, recreation, and grazing activity could cause degradation of natural integrity and scenic values, but overall effects would be minimal.

WILDLIFE

While effects on wildlife are difficult to predict under either alternative, as a rule, the more human activity the greater the impacts on wildlife. Although differences in actual recreation, grazing, and mining activity between the suitable and the unsuitable alternatives would be quite small, there could be higher levels of such activity under the unsuitable alternative. This could impact deer and elk use of the area as summer range, as well as impose greater pressure on fisheries. This alternative would also permit activities such as prescribed burning to improve wildlife habitat, although the terrain is such that this type of activity could only be implemented on a limited number of areas.

Under the suitable alternative, few or no increases from present use levels are anticipated in mining, recreation, and grazing, and there would be no major effects on wildlife. The WSA portrays a fair amount of natural ecological diversity associated with variations in landform, soils, and geology, and this provides some vegetative diversity. Because of drainage patterns, steep slopes, and rocky areas, large continuous areas of single vegetative types will not dominate the area, and most presently available habitat niches will remain available over time. Opportunities to improve fish habitat would be precluded under the suitable alternative.

RANGE

Current livestock use and management activities would not change significantly under either alternative. Grazing use is estimated at 590 AUM's under the suitable alternative and 700 AUM's under the unsuitable alternative. Vegetative manipulation for livestock and wildlife management under the unsuitable alternative is responsible for the small difference in outputs between the two. Most increases would be realized in transitory range. In summary, neither the suitable or unsuitable alternative would significantly affect current livestock forage, but the suitable alternative would preclude the option to increase range livestock forage through specific vegetative management projects.

TIMBER

The suitable alternative would result in the reclassification of timber in the WSA from the "deferred" to the "reserved" category, although under either of these classifications, timber is not suitable for harvest. The unsuitable alternative would technically permit timber management activities on 3,808 acres classified as capable forest land with a biological annual yield potential of approximately .5 million board feet. Access constraints as well as other economic and environmental considerations make this land unsuitable for timber management. Therefore, even under the "maximum commodity output" concept under which the economic tradeoff analysis was carried out, timber outputs from the West Needle WSA are zero.

WATER

Water Yield

Under the suitable alternative future water development projects in the WSA would be excluded unless special approval were given by the President of the United States. Most alpine snowpack management activities, such as snowfences or similar structures, would be incompatible with the wilderness character of the area. Estimated yield is 33,800 acre-feet per year. Under the unsuitable alternative, techniques to increase water yield could be implemented in a very limited number of areas, but these would not result in appreciable increases in water yield.

Water Quality

Under either alternative, water quality could decline due to increased use around Crater Lake. Any other improvements in access or developments that would increase use could be expected to effect to some degree the generally high water quality that presently characterizes the area. Available mitigation measures include public education, camping restrictions, and limitations on numbers of users.

Water quality classification and standards assigned by the Colorado Water Quality Commission would be expected to emphasize maintenance of existing water quality under the suitable alternative, but would allow some degradation under the unsuitable alternative.

Water Uses and Water Rights

The unsuitable alternative would not affect either on-site or downstream water uses. The suitable alternative would prohibit water development projects except by approval of the President in accordance with the 1964 Wilderness Act.

MINERALS

The two alternatives differ somewhat in their effects on the various stages of mineral exploration and development. Mineral exploration activities can legally take place under both alternatives and may be undertaken regardless of designation, at least until the end of 1983. If an operator has adequate time to do the required exploration and is not unreasonably restricted in access and movement within the area, the feasibility of developing a mineral resource will be based on the normal costs of doing business. This will be the case under the unsuitable alternative. If, on the other hand, an operator foresees that there will not be time to validate claims by the December 31, 1983 withdrawal deadline, or that access and movement will be severely restricted, he may be discouraged from further investment in the exploration effort. The additional costs of mitigation and restoration for exploration and development might make a feasible project uneconomical under the suitable alternative.

Rehabilitation of disturbed sites to a condition suitable for semi-primitive motorized or non-motorized recreation under the unsuitable alternative would generally be feasible and reasonable. This would involve regrading, revegetating, and restoring production of the land but not necessarily restoring the original contours of the land surface. Large flat areas could remain as evidence although the area would be essentially natural in character. Rehabilitation of disturbed sites to a condition suitable for wilderness would mean restoration of natural ecosystems. In many cases, this degree of restoration is probably not technically or economically feasible in the short-term.

As of April 30, 1982, there were a total of 502 unpatented mining claims, comprising approximately 10,040 acres, on the WSA. Thirty-one of these claims, comprising approximately 620 acres, are located north

of Molas Creek. Ninety-four percent of the WSA is rated as having a high to moderate potential for locatable minerals. The entire WSA is rated as having a low potential for leasable minerals. Although mineral exploration and development may legally take place under either alternative, feasibility under the suitable alternative may be limited by increased access costs as well as environmental constraints and mitigation measures required in the operating plan. There is also the possibility that mineral discoveries could be foregone following withdrawal of the WSA from mineral location and leasing.

LAND STATUS

The suitable alternative could result in withdrawal of the area from mineral entry after December 31, 1983 under provisions of the 1964 Wilderness Act. Because of this, under the unsuitable alternative, there is a greater possibility of land being taken to patent under provisions of existing mining laws. Neither the suitable nor unsuitable alternative would have apparent effects upon special land uses in the WSA.

LANDFORM AND SOILS

Landforms and soils would not be significantly affected under either alternative. Increased potential for mineral activity in the unsuitable alternative could displace soils within specific project areas, but mitigation measures would be required to reduce this impact. Natural forces and erosion rates would continue unaffected, for the most part, under either alternative.

PROTECTION

Air Quality

There is no evidence to indicate that selection of either alternative would impact either the current Class II air quality designation or air quality protection requirements within or without the area.

Fire

Under the suitable alternative, fire could potentially resume its natural role in the ecology of the area. Because of its limited size, as well as the need to protect adjacent areas from wildfire, it would not be possible to implement a complete natural fire policy. Nevertheless, a fire management policy incorporating the use of naturally occurring fires burning within prescription could be implemented to promote a wilderness environment truly shaped by naturally-occurring phenomena. Without such a policy, wildfire occurrence and intensity would increase in the long-run due to natural accumulation of ground fuels. As the possibility of major fires increases, adjacent lands would be increasingly threatened as well. Under this alternative, transportation of personnel to fires, as well as suppression efforts, would be generally restricted to non-mechanical means. This would increase response time and enhance the likelihood of larger fires.

Under the unsuitable alternative, a fire management policy would take much the same form as under the suitable alternative. Possible differences would be that the option of using mechanical means for transportation and suppression exists in areas where the terrain would permit. Increased use of the area under either alternative could increase the occurrence of man-caused fires.

Integrated Pest Management

Under the suitable alternative, opportunities for utilizing an integrated approach to pest management would be very limited. Prevention and control of insect and disease outbreaks using integrated pest management would be limited to those situations in which non-wilderness values on adjacent lands are threatened.

Under the unsuitable alternative, very limited opportunities would be available to coordinate predator management with range management activities. These opportunities would be limited by access to the area.

VEGETATION

Under the suitable alternative, vegetation within the WSA would continue to be influenced mainly by natural ecological forces. Livestock grazing and dispersed recreation will continue to be the major man-caused impacts unless major mineral developments occur, which could remove some land from production. Though reclamation can return disturbed areas to production, vegetation composition and productivity could be influenced over a long period of time due to the slow recovery of fragile alpine and sub-alpine ecosystems. Natural fire burning under prescription would perpetuate aspen vegetation.

Under the unsuitable alternative, vegetation could be modified through wildlife habitat and range improvement activities, but only in a limited number of areas.

ECONOMIC AND SOCIAL IMPACTS

The designation of the West Needle Wilderness Study Area would have very limited social and economic effects on the surrounding area. These effects were estimated using a regional Input-Output (I-O) model called IMPLAN. Some basic assumptions involved in using the model are as follows: Estimates of resource outputs and activities resulting from management of the WSA are based on a hypothetical point in time at which resource potentials are being fully realized. Although this point may never actually be reached, it was used as a reference point from which to evaluate the social and economic ramifications of two alternative regimes for the area. This is not an entirely legitimate use of I-O models in that they are built using historical data and therefore are not responsive to regional economic changes over time. They are most adaptable to investigating short-term effects as they relate to population, income, and employment. This model was used to investigate changes at some future date based on the assumption that presently existing relationships between forest outputs and such parameters as population, income, and employment levels will remain unchanged.

POPULATION, EMPLOYMENT, AND INCOME

Neither the suitable nor the unsuitable alternative would have a significant effect on population within the local area. Under the suitable alternative, outputs and uses of the West Needle WSA would be associated with approximately 20 jobs in the local area producing an income of approximately $282,000. Half of these jobs would be in the wholesale and retail trade sectors. Under the unsuitable alternative, outputs and activities from the area would be associated with approximately 87 jobs producing an income of $1,251,000. Forty of these jobs are in the wholesale and retail trade sectors, and the rest are in a variety of other sectors. These differences are mostly the result of higher estimated recreation use under the unsuitable alternative. Any major mineral developments, which were not estimated, could significantly affect population and income patterns.

LIFESTYLE

Neither alternative would significantly alter lifestyles in the area unless major mineral activity occurred. In this respect, the suitable alternative is less likely to affect lifestyles in the vicinity of the WSA.

ATTITUDES, BELIEFS, AND VALUES

Many people in the area, especially newer residents, tend to favor preservation of natural areas such as those within the West Needle WSA. Others more oriented toward land-based economies such as agriculture, feel that resources in the WSA should be used to support jobs and improve standards of living in the area. A certain amount of conflict and resentment could result from implementing either alternative.

SOCIAL ORGANIZATION

Neither alternative would significantly affect the level or type of social services available in the area. The suitable alternative could result in slightly less payments to counties in the long-run as a result of potentially lower mineral and livestock resource outputs.

POPULATION AND LAND USES

Neither alternative would significantly affect land uses and population distribution unless a discovery of a major mineral deposit is made. Such a discovery could cause an increase in population and changes in land uses within the area.

COST-EFFICIENCY ANALYSIS

An economic efficiency analysis was carried out to determine an incremental present net value of wilderness designation for the West Needle WSA. This involved estimating resource outputs from the area under each alternative (See Table II-1), and placing dollar values on these outputs. Prices used were the same values used in the Forest-wide planning effort. Results of the analysis are shown in Table IV-1.

TABLE IV-1

Results of Cost-Efficiency Analysis for the West Needle WSA Using Discount Rates of Four Percent and Seven and One-Eighth Percent. (All figures are in thousands of 1978 dollars)

	Present Values Based On 4% Discount Rate		Present Values Based On On 7-1/8% Discount Rate	
Resource/Cost	Suitable Alternative	Unsuitable Alternative	Suitable Alternative	Unsuitable Alternative
Timber	$ 0	$ 0	$ 0	$ 0
Water	14,307	14,307	9,054	9,054
Recreation				
Wilderness	4,232	0	2,678	0
Non-wilderness	0	8,142	0	5,152
Range	112	133	71	84
Total Benefits	18,651	22,582	11,803	14,290
Forest Service Costs	520	397	331	252
Total Present Net Value (PNV)	18,131	22,185	11,472	14,038
Incremental PNV of Suitable Alternative	-4,054		-2,566	

The table shows that the incremental present net value (PNV) of the suitable alternative is negative under both discount rates. "Incremental" refers to the net difference between the PNV's of the suitable and unsuitable alternatives. Based on the outputs and costs considered, the suitable alternative would result in a lowered cost-efficiency of overall management of the Forest. It must be recognized that certain intangible benefits and costs, for which quantification was not possible, were not included in this analysis. An example of such an intangible benefit would be the vicarious satisfaction derived by some individuals in knowing that the area is protected under a wilderness designation even though they have no intention of ever visiting the area themselves. The higher estimated outputs for recreation under the unsuitable alternative account for a large proportion of the difference between alternatives. Minerals benefits were not included in the analysis because of lack of accurate data on the resources and dollar values involved.

WILDERNESS SUITABILITY OR UNSUITABILITY

OVERVIEW

Standards to be met by components of the National Wilderness Preservation System (NWPS) were established in the Wilderness Act of 1964. Forest Service policy requires that capability, availability and need for wilderness be analyzed prior to determining the suitability or unsuitability of an area for inclusion in the NWPS. These three criteria are discussed below.

WILDERNESS CAPABILITY

Wilderness capability is analyzed without regard to either the need for more wilderness or the availability of the area for wilderness designation. It is determined by both the degree to which an area possesses the basic characteristics necessary for wilderness designation as well as the degree to which an area can be managed for wilderness.

With respect to the first of these two criteria, the Wilderness Attribute Rating System (WARS) was developed during RARE II to indicate the degree to which an area possesses wilderness attributes. The system involves a rating for each of several attributes, which are then summed to arrive at a composite WARS rating. Possible scores range from 4 to 28, with 28 indicating possession of optimum wilderness characteristics. Following is a summary of the WARS rating for the Forest Service portion of the West Needle Wilderness Study Area (RARE II Area No. A2303). Detailed worksheets are in the planning records on file in the Forest Supervisor's Office in Durango, Colorado. These ratings were reconfirmed during the Forest Planning process. Although no such rating was made for the West Needle Contiguous WSA, the area is similar enough in characteristics that any conclusions drawn from the rating would be applicable to the BLM portion as well.

Wilderness Attribute	Rating
Influence on Natural Integrity	6
Influence on Apparent Naturalness	6
Solitude Opportunity	4
Primitive Recreation Opportunity	5
Composite WARS Rating	21
Supplementary Wilderness Attributes	3
Scenic Value	5

The West Needle WSA rating of 21 is ninth among the 38 RARE II areas on the San Juan National Forest. Of the 300 RARE II areas in Colorado the median rating is 19. Thus, basic wilderness characteristics are well represented on the WSA.

The second element of wilderness capability is "manageability." The most uncertain aspect of manageability relates to the potential future development of mineral resources, primarily in the northern portion of the area. The following are indicators of manageability:

1. Ability to Manage the Area as an Enduring Resource of Wilderness and to Protect and Manage its Natural Character

   Recreation, grazing and other natural resource uses can generally be managed to protect wilderness character on both the Forest Service and BLM portions of the WSA. An exception to this is the area of the West Needle Contiguous WSA north of Molas Creek. This land is adjacent to Molas Lake and Molas Lake Campground, which is on land owned by the town of Silverton. Recreation activities in the vicinity of Molas Lake include fishing, developed site camping, and off-road vehicle use. The terrain is such that there are no topographic or other natural barriers separating the developed recreation area from the WSA. Significant manageability problems would exist in attempting to prevent motorized use from taking place within designated wilderness. This is why, under the suitable alternative, an adjustment has been made to exclude this 1,240 acre area which is determined as incapable for wilderness.

   Mining activity also represents a potential manageability problem under the suitable alternative. Although active mines were specifically excluded from the West Needle Contiguous WSA during the delineation of the eastern boundary, there is a possibility that additional mining claims presently within the WSA could become active. Although most surface disturbances from mining could be mitigated under Federal regulations, some impacts and use conflicts could be expected from exploration and developmental activities.

2. Size and Shape of the Area

   The West Needle and West Needle Contiguous WSA's contain a total of 21,580 acres, with the suitable alternative recommending 20,340 for wilderness designation. This area is relatively compact with boundaries in many areas being determined by well defined topographic features. The area is of sufficient size and shape to be manageable as wilderness. Manageability problems in relation to boundaries are discussed below.

3. Location Relative to External Influences

   The West Needle and West Needle Contiguous WSA's are almost completely bounded by transportation corridors. Along the south and west boundaries is the Durango and Silverton Narrow Gauge Railroad right-of-way which follows the Animas River. There are very few developments in this segment of the valley, limited to

a few cabins and patented mines. The narrow gauge railroad runs several trips per day during summer months, with backpackers using the train as a means of access to the Weminuche Wilderness. The train is a unique historical feature of the area, although some might feel that its proximity to the WSA boundary would detract from a true wilderness experience. The train is also responsible for starting several fires per season along the right-of-way. Most of these are immediately discovered and extinguished by railroad personnel.

U. S. Highway 550 runs along the north and west boundaries of the WSA at distances from one to three miles. This corridor is heavily used during summer and fall months and can be viewed from many locations within the WSA. Forest Road 591 parallels the western boundary of the WSA for approximately four miles at distances of less than a half mile. This road is used by sight-seers, campers, fishermen, and hunters.

Considerable mining activity occurs to the north of the WSA near Silverton, but this is at such a distance as to have no major impacts on the WSA. Of greater significance is the mineral activity along the eastern edge of the West Needle Contiguous WSA. Associated with this activity are helicopter flights over the WSA for purposes of aerial surveys and transportation of men and equipment.

Along the southwest side of the boundary runs the Purgatory Trail, which is fairly heavily used by horseback riders, backpackers, and hunters. The Weminuche Wilderness is east of any point within the WSA.

In summary, there are several types of external influences which could detract from the wilderness environment of the WSA, but many of these are actually means of access to the WSA. Manageability of the WSA in relation to three factors would be dependent upon the extent to which use could be controlled to prevent overcrowding from taking place.

4. Boundaries

The following points can be made concerning boundaries on both the Forest Service and BLM WSA's:

-They can generally be located to avoid conflicts with existing uses and developments. However, under the suitable alternative, mineral activity taking place based on prior rights could present manageability problems within the boundary.

-They can be readily and accurately described in most areas. Problems could exist in locating the western boundary of the West Needle Contiguous WSA north of the Forest Service portion. There are no topographic features to help define the boundary, which is actually the line separating Forest Service and BLM land.

-They can be located in most areas to use features that constitute a barrier to prohibited use or a shield to protect the wilderness environment. An exception is the area of the West Needle Contiguous WSA adjacent to Molas Lake. Here, no barriers exist, and manageability with respect to prohibited uses would pose problems. This area of 1,240 acres is excluded under the suitable alternative.

-They can be located to provide an opportunity for access and trailhead facilities.

Boundary location, in general, poses no major problems with respect to manageability of the area as wilderness.

Based on analysis of both manageability and possession of wilderness characteristics, the West Needle WSA is capable for wilderness.

WILDERNESS AVAILABILITY

Value Comparison

Availability of an area for wilderness designation is determined, in part, by a comparison of the value and need for the wilderness resource with the value and need for other resources. In theory, the values of the wilderness resource, both tangible and intangible, should be greater than the values foregone. However, the highest and best use of an area for wilderness in economic terms is difficult to assess because of the difficulty of establishing and agreeing upon monetary values for the intangible benefits of wilderness.

Wilderness values in the West Needle Wilderness Study Area include:

-The potential to provide the opportunity for a wilderness recreation experience to 290 people at one time (PAOT).

-Protection of natural ecosystems, soil and water quality, and other resources.

Minerals represent the most significant values that could be foregone under the suitable alternative. There is high/moderate potential for locatable mineral discoveries on approximately 94% of the WSA. Under the unsuitable alternative, mineral exploration would be allowed with appropriate safeguards. The suitable alternative would place additional constraints on exploration by increasing costs to the operator. There is also the possibility that a significant mineral discovery would be foregone following the December 31, 1983 minerals withdrawal deadline established in the 1964 Wilderness Act.

With respect to timber resources, very little timber value would be foregone under the suitable alternative. Although the WSA includes approximately 3,800 acres of land capable for timber production, none of this is considered suitable for timber management because of the scattered nature of manageable stands as well as access constraints imposed by the rugged terrain.

Although recreation would constitute a major use of the WSA under the suitable alternative, the type of recreation, by its very nature, results in a lower capacity than would otherwise be the case. Therefore, even though the value of a wilderness RVD ($8.00) is higher than a dispersed RVD ($3.00), the higher use that could take place under the unsuitable alternative results in a net recreation value foregone under the suitable alternative. This is summarized below:

	Suitable Alternative	Unsuitable Alternative
Recreation Value	$8.00/Recreation Visitor Days	$3.00/Recreation Visitor Days
Recreation Capacity	24.6 Thousand Recreation Visitor Days/Year	126.4 Thousand Recreation Visitor Days/Year
Total Recreation Value	$196,800/Year	$379,200/Year

The recreation value foregone under the suitable alternative is therefore $182,400 per year.

The suitable alternative would preclude projects designed to increase water yield in the WSA. The suitable alternative would also decrease the opportunity to construct water storage and related facilities in the WSA since water improvements in wilderness require Presidential approval. Currently, though, there are no proposals to construct water developments for livestock or other resources in this WSA.

Existing Constraints and Encumbrances

A 640 acre parcel of land within the West Needle WSA is owned by the State of Colorado. Under either alternative, this land is identified as highly desirable for acquisition or exchange. If the parcel is not obtained, problems could arise in managing the surrounding area under the suitable alternative. The State may elect to develop the area for minerals, for example, and require access across designated wilderness.

All other land within the WSA is administered by either the Forest Service or the Bureau of Land Management.

Two power withdrawals are located within the WSA, one of which is on Forest Service land and the other on BLM land. Since there are no present or anticipated plans for water developments, availability of the WSA for wilderness should not be affected.

Activities on unpatented mining claims would be governed by Federal Regulations (36 CFR 228 - Forest Service, and 43 CFR 3802 - BLM), although surface impacts and access routes could reduce wilderness values.

Effect of Wilderness Designation and Management on Adjacent Lands

The WSA is topographically well defined, and for the most part, geographic barriers would minimize both the effects of wilderness designation and management on adjacent lands as well as the effects of nearby non-wilderness management on wilderness. No transportation or utility corridors are proposed through the area, and trailhead and access facilities would be similar under either alternative.

Summary

The West Needle WSA is available for wilderness. Values foregone under the suitable alternative are greatest with respect to mineral resources, although these values are not quantified due to the lack of specific data on available resources. There are sufficient opportunities to make up for the small amount of resources foregone on lands outside the WSA.

WILDERNESS NEED

The RARE II process dealt with "wilderness need" on a National basis, and the process included extensive public involvement. The San Juan National Forest Land and Resource Management Planning process considered current and future public need for additional designated wilderness in the general vicinity of the West Needle Wilderness Study Area.

In considering the need for wilderness, certain assumptions were made:

-Visits to designated wilderness will increase with both increasing population and a growing awareness of wilderness.

-Some undeveloped lands provide opportunities for a primitive type of recreation experience outside wilderness.

-Within social and biological limits, management increases the capacity of established wildernesses to support human use without unacceptable depreciation of wilderness resources.

The following factors were considered in determining the need for designated wilderness on the West Needle WSA:

1. Location, Size, and Type of Other Wildernesses in the General Vicinity and their Distance From the Study Area

   Prior to 1980, there were eight wildernesses within a 100-mile radius of the West Needle WSA, with a total of 679,607 acres. Four are administered by the Forest Service, and three are administered by the National Park Service. With passage of the New Mexico Wilderness Act of 1980 and the Colorado Wilderness Act of 1980, Congress increased the size of four of these National Forest System

wildernesses and established five new wildernesses within such a radius. The new wildernesses are all within the National Forest System and contain a total of almost 700,000 acres. Therefore, there are now thirteen wildernesses with a total of 1.38 million acres within the 100-mile radius of the West Needle WSA. Eleven are in the National Forest System and two are in the National Park System.

Figure IV-1 shows the location of the wildernesses within a 100-mile radius of the West Needle WSA. Table IV-2 lists acres and recreation use on wilderness in the vicinity of the WSA. The table indicates that there are a number of designated wildernesses in the vicinity of the West Needle WSA, representing a large acreage base. These cover a diversity of ecosystem and landform types, including canyons, sand dunes, and mountainous alpine areas.

2. Present Visitor Pressure on Other Wildernesses, Trends in Use, and Changing Patterns of Use

Because of the large land area represented by designated wildernesses within a 100-mile radius of West Needle WSA, as well as the relatively low population density in this part of the Southwest, overall visitor pressure on other wildernesses is relatively low. This can be partially explained by the fact that wilderness recreation experiences, by definition, require low user density per unit area. Therefore, the low visitor pressure on nearby wildernesses can be interpreted to indicate that existing areas are indeed fulfilling their purpose in providing "opportunities for solitude in areas untrammeled by man." But demand for and use on wilderness areas is expected to increase in the immediate future. Trends indicate that individuals and families will tend to spend more of their vacation time in one location rather than on the road. Wilderness trips provide an opportunity to experience the outdoors in a natural setting, along with a unique type of challenge not available in urban areas. More people are realizing this, and wilderness visits are expected to increase accordingly. Increases in leisure time as well as a growing national awareness of environmental matters will influence this trend as well.

The overall low visitor pressure on nearby wildernesses does not mean that localized overuse is not occurring. Many areas within the San Juan National Forest are very popular, and during summer months, use is at such levels that site degradation occurs and wilderness experiences may be impaired.

The West Needle Wilderness Study Area is in a very accessible location between Durango and Silverton. It is a popular area from the standpoint of both on-site use and off-site observation. The area can be viewed and photographed from U. S. Highway 550, and is readily entered from a trailhead a short distance from the same highway. Along the eastern side of the WSA runs the Durango and Silverton Narrow Gauge Railroad, from which the WSA can also be observed and accessed. The popularity of the area is an important factor from the standpoint of need.

FIGURE IV-1

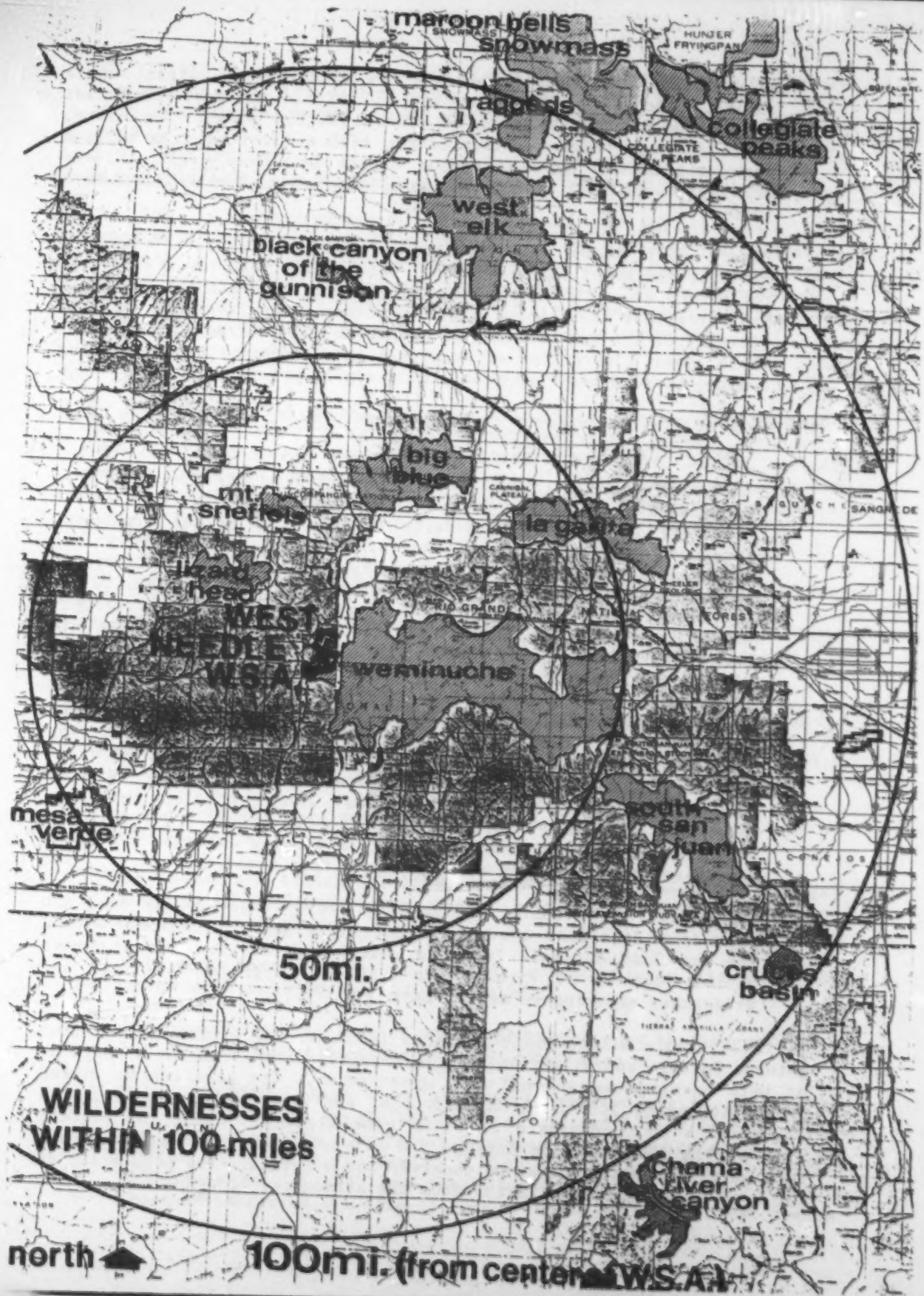

maroon bells
snowmass
raggeds
collegiate peaks
west elk
black canyon of the gunnison
big blue
mt. sneffels
la garita
ike & head
WEST NEEDLE W.S.A.
weminuche
mesa verde
south san juan
50mi.
WILDERNESSES WITHIN 100 miles
Chama river canyon
north
100mi. (from center of W.S.A.)

Table IV-2 lists wildernesses within a 100-mile radius of the West Needle WSA along with their size and relative use levels.

TABLE IV-2

Wildernesses Within a 100-Mile Radius of West Needle WSA, Showing Size, Total Recreation Visitor Days, and Relative Use Ratings

	Acres	1980 Use	Recreation Visitor Days/ Acre/Year	Relative Use Rating
Big Blue	97,700	NA	NA	Low*
Black Canyon of the Gunnison (NPS)	11,180	NA	NA	Low*
Chama River Canyon	50,260	5,600	.11	Low
Cruces Basin	18,000	1,600	.09	Low
La Garita	108,486	32,300	.30	Low
Lizard Head	40,000	21,000	.53	Moderate
Maroon Bells	174,329	130,900	.75	High
Mesa Verde (NPS)	8,100	NA	NA	Low*
Mt. Sneffels	16,200	11,100	.69	Moderate
Raggeds	68,000	19,000	.28	Low
South San Juan	133,463	41,500	.31	Low
Weminuche	463,224	255,400	.55	Moderate
West Elk	194,412	101,500	.52	Moderate
Total	1,303,605			

NPS - Administered by the National Park Service, U.S. Department of the Interior
NA - Data not available
* - Estimated relative use rating.

Relative Use Ratings Based on:
0-.35 Recreation Visitor Days/Acre/Year Low
.36-.70 Recreation Visitor Days/Acre/Year Moderate
.70+ Recreation Visitor Days/Acre/Year High

3. Lands' Ability to Provide Opportunities for Unconfined Outdoor Recreation Experiences

While the West Needle Wilderness Study Area has high potential to provide opportunities for unconfined outdoor recreation experiences, these opportunities are not in short supply in the surrounding area.

4. Ability of Plant and Animal Species to Compete with People and Projects

Natural ecological forces will continue relatively undisturbed under either alternative. Plant and animal species native to the area will be maintained under either alternative as well.

5. The Need to Provide Sanctuary for Species that Have Demonstrated an Inability to Survive in Less Primitive Surroundings

No species have been identified on the WSA that require a wilderness environment for survival.

6. Provide for Preservation of Unique Landform Types and Ecosystems

Although there are no unique ecosystems or landforms within the WSA, the area is characterized by spectacular scenery, and rugged mountains. These can be viewed from a major highway and the railroad right-of-way. Wilderness designation would preserve this scenery in its natural setting as well as protect the sensitive alpine and sub-alpine ecosystems that are common within the WSA.

Summary

Based on the six factors discussed above, the West Needle WSA is not needed for wilderness. Although the area is characterized by rugged topography, spectacular scenery, and natural integrity, there is not an established need for additional wilderness-related opportunities in this type of setting.

OTHER CONSEQUENCES

None known.

SHORT-TERM USES OF MAN'S ENVIRONMENT VS. THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

There would be no direct effects on long-term productivity or renewable resources under either alternative. The increased likelihood of mineral activity under the unsuitable alternative could increase the possibility of long-term effects on the renewable resource productivity of the land actually disturbed by mining. However, most of the surface resource effects caused by mining could be mitigated under Federal Surface Protection Regulations.

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

With the exception of wilderness opportunities and minerals, there would be no irreversible or irretrievable commitment of resources under the unsuitable alternative. "Irretrievable" refers to a permanent loss of resource production resulting from management decisions that are not irreversible, whereas "irreversible" refers to long-term unavailability of a resource. Mining represents an irreversible commitment of non-renewable mineral resources. Mining activity would also involve minimal

commitments of livestock forage as areas become disturbed. By using proper reclamation techniques, however, losses of production can be made short-lived and insignificant in quantity. The wilderness resource could be irreversibly committed, depending on how the area was to be managed under the unsuitable alternative, although this is unlikely in the West Needle WSA.

Under the suitable alternative, mineral resources could be irreversibly lost following the minerals withdrawal deadline of December 31, 1983. Certain amounts of livestock forage could be irretrievably lost as a result of the inability to carry out intensive management activities in a wilderness area. Irretrievable resources are limited to the difference between quantities produced under the suitable alternative and the unsuitable alternative.

PROBABLE ADVERSE EFFECTS THAT CANNOT BE AVOIDED

SUITABLE ALTERNATIVE

-There would be reduced opportunities and an increase in the cost of mineral exploration and development because of the need for more stringent mitigation and restoration measures.

-There would be less opportunities for developing a variety of uses. There would be a loss of semi-primitive motorized recreation opportunities.

-A minimal amount of livestock forage would be foregone.

UNSUITABLE ALTERNATIVE

-There could be an eventual irreversible loss of wilderness character through mining, and recreation activities in the area.

-There would be a slight reduction in wilderness values and wilderness recreation opportunities.

CONFLICT WITH OTHER GOVERNMENT AGENCY PLANS

There are no known conflicts with plans of other government agencies under either alternative.

CHAPTER V

GLOSSARY

The following is a partial glossary of terms that may be helpful in understanding this report. A more complete glossary can be found in the draft Environmental Impact Statement for the San Juan National Forest, Forest Plan.

Available (Forest Land) - Forest land which has not been legislatively withdrawn or administratively withdrawn from timber production by the Secretary or the Chief of the Forest Service. This classification includes RARE II further planning areas and administrative designation, below the Chief's level, withdrawing land from timber production.

Capable (Forest Land)- Forest land which is capable of growing industrial crops of wood at or above the minimum biological growth potential of 20 cubic feet of wood per acre per year. This classification includes both accessible and inaccessible, stock and non-stocked land.

Continuous Grazing - The grazing of a specific unit by livestock throughout a year or for that part of the year during which grazing is feasible.

Deferred (Forest Land) - Forest land which has been legislatively or administratively designated by the Secretary or Chief for wilderness study or possible additions to the Wilderness System. This classification includes RARE II areas designated as wilderness, but does not include RARE II areas designated for further planning.

Deferred Rotation - Discontinuance of grazing on various parts of a range in succeeding years, allowing each part to rest successively during the growing season to permit seed production, establishment of seedlings or restoration of plant vigor.

Diversity - The relative degree of abundance of wildlife species, plant species, communities, habitat or habitat features per unit of area.

Input-Output Analysis Model (I-O) - A quantitative study of the interdependence of a group of activities based on the relationship between inputs and outputs of the activities. The basic tool of analysis is a square input-output table, interaction model, for a given period that shows simultaneously for each activity the value of inputs and outputs, as well as the value of transactions within each activity itself. It has especially been applied to the economy and the industries into which the economy can be divided.

Integrated Pest Management - A management strategy for suppression of Forest pests which integrates silvicultural, mechanical, biological, and chemical suppression strategies that achieve greater efficiency and safety than the same strategies used alone.

Leasable Minerals - Coal, oil, gas, phosphate, sodium, potassium, oil shale, sulphur (in Louisiana and New Mexico), and geothermal steam.

Locatable Minerals - Those hardrock minerals which are mined and processed for the recovery of metals. May include certain non-metallic minerals and uncommon varieties of mineral materials such as valuable and distinctive deposits of limestone or silica. May include any solid natural inorganic substance occurring in the crust of the earth, except for the common varieties of mineral materials and leasable minerals.

Present Net Value - The difference between the total discounted benefits and the total discounted costs.

Primitive Recreation - A classification of recreation opportunities characterized by an essentially unmodified environment, where trails may be present but structures are rare, and where probability of isolation from the sights and sounds of man is extremely high.

Reserved (Forest Land) - Forest land which has been legislatively or administratively withdrawn from timber production on a permanent basis. Examples of this classification are wilderness areas, primitive areas, research natural areas or special interest areas, or similar formal withdrawals approved by the Chief or higher authority.

Rest-Rotation - A grazing system in which the pastures being roated receive nonuse for a period of plant recovery.

Riparian - Referring to the land bordering a stream, lake or tidewater.

Roaded Natural Recreation - A classification of recreation opportunities that characterizes a predominately natural environment with evidence of moderate permanent alternate resources and resource utilization. Evidence of the sights and sounds of man is moderate, but in harmony with the natural environment. Opportunities exist for both social interaction and moderate isolation from the sights and sound of man.

Rural Recreation - A classification of recreation opportunities that characterizes an area in which the sights and sounds of man are prevalent and the landscape has been considerably altered by the works of man.

Semi-Primitive Motorized Recreation - A classification of recreation opportunities characterized by moderately dominant alterations by man with strong evidence of primitive roads and/or trails.

Semi-Primitive Non-Motorized Recreation - A classification of recreation opportunities characterized by few and/or subtle modifications by man, and with a high probability of isolation from the sights and sounds of man.

Suitable (Forest Land) - Forest lands to be managed for timber production.

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